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ABSTRACT

The impetus for developing a model to retrain women teachers and skilled women to become teachers in traditionally male-intensive secondary vocational education has emerged from a combination of problems and issues. The most pertinent of these involve the factors of supply and demand, coupled with the need to reduce sex stereotyping and bias in employment. A retraining program should respond to the need for female teachers in male-intensive vocational programs by state and should identify where the need for such a program is greatest. The major conceptual issues that must be addressed in proposing a retraining model include the characteristics of the women for whom the program is being designed, the certification requirements of the state, job growth potential, and time required to attain skill levels and operate the retraining model. Other factors involved in planning the model are evaluation, funding sources, and packaging the program. The two areas that consistently offer the most opportunities for employing teachers in male-intensive vocational programs in most states are trade and industrial education and industrial arts. Some aspects to consider in retraining women in these areas are program design, work experience, competency-based programs, and preservice and inservice training. Recruitment practices, selection of applicants for pilot programs counseling, and various support programs must be carefully planned to insure that the first group of women entering these positions has a positive and successful experience. (BM)

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Information Series No. 137

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PREPARING WOMEN TO TEACH NON-TRADITIONAL VOCATIONAL EDUCATION

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NATIONAL INSTITUTE OF EDUCATION

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FOREWORD

The Educational Resources Information Center on Adult, Career, and Vocational Education (ERIC/ACVE) is one of sixteen clearinghouses in a nationwide information system that is funded by the National Institute of Education. One of the functions of the Clearinghouse is to interpret the literature that is entered in the ERIC data base. This paper should be of particular interest to college and university teacher education personnel, vocational education administrators, and vocational education inservice education personnel.

The profession is indebted to Roslyn D. Kane for her scholarship in the preparation of this paper and to her colleagues, Laura Chen Fernandez and Jill Miller Godoff, who assisted in developing the training model in conjunction with an earlier Bureau of Occupational and Adult Education funded project (June 1977). Recognition also is due Marilyn Steele, the Mott Foundation, Linda Brown, Lawyer's Committee for Civil Rights Under the Law, and Louise Vetter, The National Center for Research in Vocational Education, for their critical review of the manuscript prior to its final revision and publication. Robert D. Bhaerman, Career Education Specialist at the ERIC Clearinghouse on Adult, Career, and Vocational Education, supervised the publication's development. Sylvia Bowers assisted in the editing of the manuscript and Anne Gilmore typed the final draft.

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ABSTRACT

The impetus for developing a model to retrain women teachers and skilled women to become teachers in traditionally male-intensive secondary vocational education has emerged from a combination of problems and issues. The most pertinent of these involve the factors of supply and demand, coupled with the need to reduce sex stereotyping and bias in employment. A retraining program should respond to the need for female teachers in male-intensive vocational programs by state and should identify where the need for such a program is greatest. The major conceptual issues that must be addressed in proposing a retraining model include the characteristics of the women for whom the program is being designed, the certification requirements of the state, job growth potential, and time required to attain skill levels and operate the retraining model. Other factors involved in planning the model are evaluation, funding sources, and packaging the program. The two areas that consistently offer the most opportunities for employing teachers in male-intensive vocational programs in most states are trade and industrial education and industrial arts. Some aspects to consider in retraining women in these areas are program design, work experience, competency-based programs, and preservice and inservice training. Recruitment practices, selection of applicants for pilot programs counseling, and various support programs must be carefully planned to insure that the first group of women entering these positions have a positive and successful experience. (BM)

DESC:: *Teacher Education; *Vocational Education Teachers; *Females; Working Women; Teachers; Skilled Workers; *Retraining; *Trade and Industrial Education; Industrial Arts; Models; Vocational Education; Program Planning; Sex Discrimination; Sex Stereotyping; Certification; Skill Development; Evaluation; Financial Support; Program Design; Ancillary Services; Recruitment; Participant Characteristics; Employment Opportunities

IDEN:: *Non-Traditional Occupations

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RATIONALE FOR A RETRAINING MODEL

The impetus for developing a model to retrain women elementary and secondary school teachers and skilled women to become teachers in traditionally male-intensive[1] secondary vocational education and industrial arts courses has emerged from a combination of problems and issues.[2] The most pertinent of these involve the factors of supply and demand, coupled with the need to reduce sex stereotyping and bias in employment.

THE OVERSUPPLY OF TEACHERS

A recent survey of education graduates indicated that approximately one-half of the graduates who sought employment could not find teaching jobs.[3] The degree of difficulty in finding employment varied markedly among geographic areas and by subject fields; e.g., those having the greatest difficulty were secondary school teachers in the West.

The decline in teaching positions has particular negative impact on women, since teaching continues to be the primary occupation of women professionals. Fifty-three percent of all women in the labor force with a college education are in teaching; only nineteen percent of men with a college education are so employed.[4] Over two-thirds of the elementary and secondary school teachers in this country are women.[5]

The number of teaching positions is declining more noticeably than has been expected. Fewer teachers are leaving teaching than had been projected. During the past fifteen years, new graduates of teacher education programs have filled about seventy-five percent of the annual demand for teachers; the remaining twenty-five percent of the positions have been filled by former teachers returning to the labor force usually after childbearing or childrearing.[6] Fewer teachers during the last decade left their jobs for homemaking; those who did shortly returned to the labor force. Under these circumstances, if new and returning teachers are to find employment, they will have to be channeled into different specialties. If they are to obtain employment as teachers, a retraining model is essential.

THE DEMAND FOR VOCATIONAL EDUCATION TEACHERS

Unlike many other areas of teaching, there has been a growing shortage of vocational education teachers. This trend is expected to continue into the 1980's. The shortage is a reflection of the tremendous increase in vocational education enrollment over the past decade.

Between 1965 and 1973, vocational enrollments increased 166 percent, while total school enrollments increased only twenty-seven percent.[7] In 1972, vocational education accounted for forty-two percent of all secondary school enrollments. By the late 70's, according to the United States Office of Education, vocational programs will account for more than sixty percent of secondary school enrollments.[8]

A General Accounting Office report confirmed this trend, indicating that in only three teaching areas was there a strong demand for teachers: special education; industrial arts; and "trade, industrial, vocational and technical" education. Thirty-seven state education departments which responded to the survey indicated the existence of unfilled jobs in trade and industrial education, twenty-nine had unfilled vacancies in industrial arts, and nine had a shortage of teachers in agriculture (although twenty-three states indicated a surplus).[9] Thus, in the face of the general surplus of elementary and secondary school teachers, shortages of vocational education teachers still exist.

The sections below project the future potential of male-intensive vocational programs.

Trade and Industrial Education

With the possible exception of industrial arts, where data are inadequate and in the few agricultural states where employment priorities are invested in agri-business, enrollments in trade and industrial education are by far the largest among male-intensive vocational programs.[10]

In view of the tremendous growth in enrollment in recent years, as well as the projected growth in trade and industrial employment, it is likely that most states would find a retraining program in this area feasible.

The courses that appear most likely to warrant inclusion in a state program include: auto mechanics, drafting, metalworking, electronics,

and carpentry. Construction, maintenance and graphic arts also are courses with increasing enrollment, but the number of jobs is likely to vary from state to state.[10] Six percent of male-intensive trade and industrial students are women. Cooperative education is not independently reported and industrial arts is seriously underreported. (See section on Industrial Arts.)

Technical Education

Technical education is offered almost exclusively at the postsecondary level. Technical education enrollment at the secondary level accounted for only eight percent of vocational enrollment nationally in 1975.[11] During 1975 and 1976, only twenty-two states offered any courses in male-intensive technical programs at the secondary level; persons enrolled in these courses represent fewer than 20,000 students nationally. It is, therefore, unlikely that a major expansion of secondary school teachers will occur in this area.

Agriculture

The shortage in agricultural programs remains critical among the food producing and processing states.[12] As long as a state projects a continuing high enrollment in this area, a retraining effort focusing on training women to teach vocational agriculture would be feasible. The state of Washington, for example, reports that seventy-nine percent of its total secondary school male-intensive enrollments are concentrated in agriculture; therefore, this might be the only area in which the state could support a program.

Cooperative Education

Although cooperative education programs are widely recognized as one of the most effective learning experiences, enrollment continues to be low in most states. In 1973, cooperative programs accounted for only four percent in vocational education.[13] Only in distributive education is there a significant percentage enrolled in cooperative programs (twenty-three percent). Teachers of cooperative education tend to be male in male-intensive programs and female in female-intensive programs. However, at a time when the costs of equipping vocational shops are spiralling, cooperative programs are an attractive way to increase learning opportunities without incurring large capital and equipment costs. For these reasons, cooperative programs are expected to grow and result in the need for more teachers in this area; whether the expansion will be in male-intensive cooperative programs has not been determined. Nonetheless, expansion trends at the local level warrant investigation, particularly for diversified programs.

Industrial Arts

Although industrial arts has been included legally as part of vocational education since 1972,[15] there is still a lack of concensus among state vocational personnel as to the validity of including industrial arts as a vocational subject. Not all industrial arts enrollments are being reported as vocational enrollments. For FY 1975, only nineteen states reported enrollments in this area to United States Office of Education, although industrial arts is offered in practically every school system.

Nevertheless, from all indications, it appears that industrial arts teachers are in demand and that enrollments are expected to increase. Among the twenty-four states which projected demand for industrial arts teachers in their FY 1977 state plans, most expected a need for additional teachers beyond those who were expected to become available through pre-service programs. With increased numbers of women entering male-intensive programs, industrial arts programs should be the first to expand.

UNDERREPRESENTATION OF WOMEN IN MALE-INTENSIVE SKILLED OCCUPATIONS

Evidence of sex discrimination and stereotyping in employment is found by examining the occupations in which men and women work.[16] Twenty-five percent of all employed women work in five occupations--kindergarten and elementary school teachers, typists, waitresses, sales clerks, and secretaries--and over one half of all working women are clustered in seventeen occupations compared to sixty-three occupations for the same percentage of men.[17]

Although women made up forty-one percent of the labor force in 1976,[18] their occupational opportunities have remained relatively static over the past thirty years. Estimates from the Bureau of Labor Statistics indicated that fifty-six percent of all working women are in clerical or service occupations compared to fifteen percent of all working men.[19] On the other hand, women made up only 4.8 percent of skilled (craft and kindred) workers in the labor force in 1976.[20] Sex stereotyping and discriminatory practices that result in pre-selection of school courses on the basis of sex predetermine the low wages received by women clustered in the clerical and services areas throughout their adult lives.

If the goal of reducing sex stereotyping and increasing the number of women secondary school students who enter and remain in non-traditional vocational training is to be achieved, increasing the number of women teachers in male-intensive vocational subjects is an important objective. The retraining model proposed here can be an important first step toward that objective.

Although only 7.5 percent of the women secondary school students in 1975[21] were enrolled in male-intensive programs, the percentage of women teachers of these male-intensive courses was even more limited. In five states reporting vocational education teachers by sex, women represented an average of 0.9 percent of the male-intensive trade and industrial teachers, 0.8 percent of the agriculture teachers, and 2.5 percent of the industrial arts teachers.[22]

Although the United States Office of Education projects an increase in the number of women expected to enroll in agriculture, technical, and trade and industrial education at the secondary school level, the number of women preparing to teach these male-intensive programs is by no means encouraging. Of women education students, less than one percent are completing their undergraduate degrees in male-intensive vocational subjects.[23] Thus, little change can be expected among the male-intensive vocational teachers unless major efforts are made to change the male domination of the teaching of these courses.

The development of projects designed to address these conditions is included in the national objectives for vocational education as stated in the Vocational Education Act of 1976.[24] The retraining model described here is designed to facilitate the efforts of educators to respond to these issues.

DETERMINING THE NEED FOR A RETRAINING PROGRAM IN A STATE

A retraining program should respond to the need for teachers in the male-intensive vocational programs by state and should identify where the need for such a program is greatest. The crucial questions for a state (or a university within a state) to consider are:

- What are the major secondary school male-intensive programs with the highest enrollment rates in the state?
- Which of these programs are projected to expand?

- What are the programs where an apparent imbalance between the number of students and the number of teachers exists?

- What is the known undersupply or projected shortage of teachers in specific programs?

- Has the state described a particular emphasis on policies for eradicating sex discrimination in vocational education in its plan as required by the United States Office of Education regulations?[25]

- What is the expected expansion in employment in the male-intensive occupations for which training can be obtained through secondary school vocational programs?

- Is the existing number of teachers employed in a program area of significant size to warrant undertaking a program?

- What vocational programs in the state that are male-intensive nationally have a higher percentage of women than the national average (indicating a good climate for the program area) or markedly lower percentage (indicating that further effort is warranted in that area)?

It is important to select those male-intensive areas where good employment opportunities can be projected for women who complete the training program so that those who do undertake training will be assured of employment.

It cannot be overemphasized that caution must be exercised when utilizing state plan projections related to teacher demand. Where some states may have underestimated teacher demand, there are others that may have overestimated it.

What is suggested is that states may not be able to plan realistically or determine the need for a particular training program if they depend exclusively on projections contained in state plans. While a state or university should not train teachers for whom there is no demand, neither should they overlook other data which indicate that the state plans may have misjudged the need for vocational teachers in certain program areas.

One sign that error may exist is the ratio between student enrollment and teacher employment. An unusually high ratio would indicate that further data are needed prior to determining the demand for more teachers in that area.

IMPLEMENTING A RETRAINING PROGRAM

CONCEPTUAL FRAMEWORK

The retraining model proposed here is unique in that it defines the first program designed specifically to prepare women to become teachers of male-intensive secondary vocational programs. (A literature search conducted during the course of this writing project indicated that there was no similar retraining model developed.)

In order for the model to be useful and responsive to the realities that will be faced in its initiation (or in initiating components of it), there are several conceptual issues that must be addressed. These issues provide the framework within which the model can be utilized. They include the characteristics of the women for whom the program is being designed, the certification requirements of the state, job growth potential, and the time required to attain skill levels and operate the retraining model. These issues, along with factors involved in developing a plan for the model, appear in the sections which follow.

Characteristics of the Women

The women for whom the program is being designed include:

- New teachers who are trained to teach traditional subjects and who already have qualified for elementary or secondary teaching certificates and women with previous teaching experience in traditional subjects who are re-entering the labor force and who hold elementary or secondary teaching certificates. These teachers will possess a bachelor's or master's degree.

- Skilled women employed in male-intensive occupations with years of work experience in a specific occupation.

- Women graduates of male-intensive postsecondary vocational programs with or without work experience who possess an associate degree.

Each of these groups could be retrained profitably--if the training programs are designed to give sufficient recognition to their different backgrounds and skills. A critical task will be to determine the skills of a woman at the time she enters the program and, on that basis, to identify her best point of entry in order to increase her productivity as rapidly as possible. Success also will depend in large measure on the accuracy of the sponsor's assessment of the differing problems of the women who undertake the program. For example, if the expected work experience required for trade and industrial education in a particular state cannot realistically be obtained within the two years that stipends are likely to be available, women teachers should not be urged to undertake the program.

In designing a program for women teachers, the following issues should be considered:

- While women do not lack the capacity to perform manipulative skills relating to an occupation, such skills are learned through repetitive performance. It would take time for women who previously have not acquired these skills to learn to perform them well enough for demonstration in a teaching situation.

- There is nothing in the life pattern of women elementary and secondary school teachers to suggest that they would have acquired the skills or occupational training, much less the work experience, to qualify them for a trade and industrial education program. They may lack the essential skills which, in some cases, may require years to achieve a competency level appropriate for teaching trade and industrial courses. Short term work experience is not likely to provide women with skills adequate for teaching. Women teachers also lack courses in teaching vocational education, such as methods and curriculum development, required for those obtaining a degree.

- Women teachers would be well prepared particularly to train as industrial arts or cooperative education teachers in male-intensive areas. Industrial arts generally requires no occupational experience, and the level of manipulative skills required to meet performance criteria in industrial

arts is less than in most other male-intensive vocational areas. Cooperative education usually requires only one year of occupational experience. In a diversified program this experience can be in any one or combination of the occupational areas. Furthermore, no manipulative skills would be required to carry out the responsibilities of a cooperative teacher. Therefore, the skills required for both could be readily learned and the certification rapidly obtained by teachers already certified in other areas.

- Women who have been employed in male-intensive occupations could provide an important source of teachers for such occupations because those with work experience can readily meet the certification requirements in most states for trade and industrial occupations. On the other hand, they will need either courses in teaching skills or academic courses necessary to obtain a degree, depending on the vocational area they enter.

- Women who have completed an associate degree in a male-intensive occupation might be able to either complete their bachelor's degree in the time allocated or obtain the necessary industrial work experience.

The emphasis in program design should be on both pre-service and in-service training suitable for each type of women, based on certification requirements and the training that will permit them to acquire the skills to perform. Also essential to the success of the project are the supportive services they will need.

Certification Requirements

Since certification is a prerogative of each individual state, there is considerable divergence among states. This is reflected in diverse certification requirements. Some states require many years of work experience, others require fewer or recognize educational attainment in lieu of work experience. In all cases, in order to document their work experience, candidates are required to submit evidence of employment history and skills. A certification officer evaluates that experience to determine if the candidate has the necessary occupational skills. In recent years, there has been a trend toward utilizing occupational competency examinations to determine if a candidate is competent to teach. Some states have moved rapidly in utilizing this type of examination. With the tremendous expansion of vocational education and the accompanying demand

for qualified teachers, vocational education has become flexible in recognizing both an educational background as well as occupational experience for certification.

One approach to vocational education certification is that of the "approved program" whereby universities in a state work closely with the state department of vocational education and with certification and curriculum specialists in order to design a program that provides candidates with the educational background and occupational experiences necessary to meet the competencies required for certification. A candidate who successfully completes a program that has been approved is recognized as having met the requirements.

Among five male-intensive secondary school vocational programs (trade and industrial, technical education, agriculture, cooperative education, and industrial arts), trade and industrial is the only area where examinations are widely used to determine occupational competency or as a substitute for part of the required work experience.

Time Required to Attain Skill Levels and Operate the Model

In order to place the components of the retraining model into a realistic framework, we have considered the issue of time both as it affects the attainment of skill levels and as it creates other constraints affecting the program.

Funds are available to provide stipends to women participants for a period of two years. Since it is unlikely that women will be willing to participate unless they can receive some payment during the training period, it would be unrealistic to propose a program that would take longer than two years. Additionally, two years is probably as long as most women would be willing to invest in preparing to enter a new career. For these reasons, the model has been conceptualized within the constraint of this time period. Although this tends to put an artificial time limit on the program, it is realistic if women can obtain the necessary skills within that time frame.

Most men entering the teaching of trade and industrial subjects have been acquiring mechanical skills and know-how since adolescence. In such cases, male teachers are likely to have been utilizing relevant manual skills for many years, regardless of employment or training, whereas women teachers will be expected to acquire these skills rapidly, with less background and less opportunity than the

men have had to obtain dexterity and facility in performing entry level skills.

Evidence exists that women can be trained to acquire adequate skills.[26] However, manipulative skills are sharpened by continual use over time, and most women teachers who will participate will have had little time or occasion to develop these skills. The issue, therefore, is based on the variation of work experience required from state to state, the amount of time needed to permit a woman to prepare adequately for teaching, and whether that preparation must be acquired in a work experience situation or through other learning systems.

Many of the entry level occupations for trade and industrial courses require only one to two years to obtain entry level skills. Secondary school vocational teachers should have mastery of the skills required of high school graduates for job entry. For students who choose to go on to apprenticeship or postsecondary programs to complete their training, their high school preparation should be able to provide them with sufficient skill and knowledge to assure access. Teachers should not be expected to be prepared to teach at the level expected of a graduate of postsecondary school or an apprenticeship program. It is essential that the number of years a woman needs to spend in a trade prior to entering teaching should never be any longer than is necessary to teach that level of skills.

Although work experience is a valuable training mode, expertise in a skill can be acquired in many ways, not just through years of work experience. Acquisition of skills in a classroom may be speeded up, particularly by using competency-based curricula. Therefore, alternative methods of acquiring skills are worthy of investigation as part of the program design, e.g.: (a) competency-based laboratory training utilizing postsecondary institutions, and (b) work experience gained through internship in the schools.

The model might provide that women can work during the day while attending classes in the evening or only in the summer or some such suitable arrangement. The general calculation of work experience is evaluated on the basis of 2,000 clock hours being equivalent to one calendar year. Two years of credit are given for one year's work through supervised on-the-job training in many states. Thus, it is possible that one year of work experience in industry may be sufficient to meet the requirements of skill acquisition, if it is coupled with classroom work and successful completion of the occupational competency test where it is available.

DEVELOPING A PLAN

In planning a program for retraining women teachers and skilled women to teach in male-intensive vocational programs, the prospective sponsor must consider a variety of issues, some of which have been dealt with in preceding sections: the characteristics and qualifications of the women who are likely to be selected to participate, the certification requirements, the required work experience, and the manipulative and teaching skills that must be acquired. The program must be able to recruit women, select those who are appropriate for the teaching positions for which they are being prepared, and assure that essential supportive services are available. Support must be obtainable from the university to facilitate smooth development and implementation. Additionally, efforts also must be made to assure that staff at the university responsible for administering the program and teaching the courses, personnel in the schools where participants are placed, and supervisors in industries where participants are to gain work experience are attuned to the issues, so that their actions and attitudes are absent of sex stereotype and bias. In responding to these issues, the prospective sponsor must consider the aspects that are unique to this program and to the women it plans to train.

In order to support all essential components, a university must be assured that funding will be available, recognizing that suitable components of a training program for these selected women will be more costly than the programs that they are accustomed to operating. An important aspect of this concerns the timing of the program: it will be essential for the program to be planned ahead to assure that the state and federal fiscal cycle coincide.

Input from an advisory committee involving all interested parties--local education agencies, state education agencies, state vocational education agencies, associations (such as the American Vocational Association, American Industrial Arts Association, National Education Association), employers, women's groups--also can be extremely valuable in planning and implementing a retraining program.

Coordination of State Department of Vocational Education and Local Education Agencies with the Teaching Universities

Promotion of a retraining program within a state could emerge from within the state department of vocational education. In the event

that it does not, interest in such a retraining program may come from an educational institution within the state. Once the preliminary planning and research have been conducted and a determination has been made that a program is warranted, all further activities should proceed on a coordinated basis involving a partnership between the state department and the university. The state department of vocational education should assume responsibility for packaging the program in order to assure availability of the several sources of funding. The local education agencies also should be closely involved, since their need for more vocational education staff is an essential component of the program. The program design also may require the participation of certification and curriculum specialists working with university personnel. In addition, to assure that participants attain certification status upon completion of the program, continual communication must be maintained. Some state departments already have established administrative lines between trade and industrial education and industrial arts disciplines. Where linkages exist, efforts at coordination will have to be given special consideration. The support of teacher associations also is crucial, since it is their members who will benefit. They can assist in recruitment and assure a smooth transition when participants are placed.

An advisory committee should be appointed with members representing all those agencies whose input and cooperation are essential. A committee of this type, meeting on a regular basis, would provide a communication mechanism to keep the various agencies up-to-date with project activities and provide the opportunity for the agencies to inform the project administrators of any needs that should be taken into consideration by the university. Whatever form it takes, such a coordinating mechanism is an essential part of a successful program. If more than one pilot program is funded, coordination among pilot efforts is strongly advised.

Evaluation Plan

To realize the greatest benefit from the pilot program, clearly defined objectives must be formulated. These objectives can provide direction to further develop the program and can serve as a measuring rod for their evaluation. From the outset, it is important to define what is to be accomplished and to have some means of determining whether or not the program is progressing as planned. The evaluation plan also would be useful for programs that are not pilots.

Each program component should be described as well as the characteristics of the women who participate. Data should include cost factors

and sources of funds. A record of (a) sources of recruitment, (b) those who were rejected and the reasons, and (c) those who were recruited but decided not to participate--and their reasons--should be maintained. In addition, (a) the past work experience, (b) the General Apptitude Test Battery results, (c) the length of time each participant remained in the program, and (d) the success of the school placement should be maintained on each of the applicants. At present, it is impossible to determine the personal characteristics of women who are likely to prove successful in this program. Therefore, it is advisable for universities operating pilot programs to complete a battery of psychological tests on those who are accepted in order to determine whether conclusions can be drawn about the personal characteristics of the women selected for participation.

For those who drop out during the course of the program, an exit interview should be conducted to determine their reasons for leaving and to determine what aspect of the program might be strengthened.

A description of the placements should be included on the number of local education agencies involved, the length of time prior to placement that they committed the position, and whether women were placed in the local education agency who committed the position. Most important will be information on the success of the women after placement.

If the evaluation indicates that the pilot program is successful, a dissemination package should be prepared to provide information to other states which might decide to mount similar programs.

Funding Sources

In planning a program, one of the first issues to be addressed is the financial resources needed to support such an effort. A major purpose of the Vocational Education Act (PL 94-482) is to assist states in developing programs to overcome sex stereotyping and bias in vocational education programs and, thereby, furnish equal education opportunities to persons of both sexes.

The section describes provisions of the regulations that provide funds (on a national basis and through states) which can be utilized for retraining, participants, and other essential supportive activities.[27]

Funds Available on a National Basis

Commissioner's Discretionary Programs of National Significance for Vocational Education.[28] Under this part of the legislation, the Commissioner can fund projects of national significance. The projects can be research, exemplary and innovative programs, personnel training, and grants to assist in overcoming sex bias. An estimated $27 million will be available for these programs. Of this amount, $13.5 million will be for research and demonstration projects and $1.6 million for curriculum development.[29] These projects must show evidence that they will be used in a substantial number of classrooms.

Certification Fellowship Program. Another program that comes under the Commissioner's discretion is the vocational education certification fellowship program which is designed to provide opportunities for: (a) certified teachers who have been trained to teach in other fields and (b) persons in industry, business, and agriculture who have skills and experience in vocational fields for which there is need.[30]

Approximately $3.5 million dollars has been allocated for this undergraduate program (which is not to be confused with the graduate level leadership development award program). Persons selected for such fellowships are entitled to stipends of $4,500 for up to two years (as well as allowances for subsistence and other expenses for her dependents) for each academic year and $900 for each summer session. Under this program, the institution which a recipient attends receives an allowance of $2,000 for the academic year and $500 for the summer session.[31] Since this is a national program, there will be no matching involved for programs funded under this part. The fellowships are to be apportioned equitably amond the states, based upon such factors as vocational education enrollment, the incidence of youth unemployment, and school dropout rates.

Funds Available through the States

Funds are available under *Subpart 2--Basic Grants,* which represents 80 percent of the federal funds allocated to the state and under *Subpart 3--Program Improvement and Supportive Services,* which represents the remaining 20 percent of federal funds to states. Although matching funds are required for certain activities, it is stipulated in PL 94-482 that from sums made available to the states, the Commissioner shall pay 100 percent of the cost to support activities which show promise of overcoming sex stereotyping and bias.[33]

The components of a retraining program which can be supported under each Subpart are described below.

Basic Grants to State Vocational Education Programs. Each state is required to allocate $50,000 for full-time personnel whose responsibility is to work toward eliminating sex discrimination and stereotyping and insuring equal education opportunities for both sexes.[34] Some of the functions assigned to such personnel include working to: (a) assist local educational agencies and other interested parties in the state to improve vocational education opportunities for women, and (b) develop and support actions to correct problems brought to the attention of this personnel through activities carried out in eliminating sex discrimination and stereotyping from all programs.[35]

In addition to funding the activities of full-time personnel assigned to these tasks, funds may be utilized to support studies that would facilitate carrying out these functions.[36] Since this program supports these activities, writing the program into the state plan would place the state on record in support of these objectives as required by the regulations.[37]

In addition, under §104.621, funds can be used by a state to provide vocational education programs for the following special groups:

- Persons who had been homemakers but who now, because of dissolution of marriage, must seek employment.[38]
- Persons who are single heads of households and who lack adequate job skills.
- Persons who are currently homemakers and part-time workers but who wish to secure a full-time job.[39]
- Women who are now in jobs which traditionally have been considered jobs for females and who wish to seek employment in areas which have not been traditionally considered as such.[40]

The supportive services which can be provided by basic grant funds include counseling, job development (placement services) and job follow-up supports (university oversight of work sites).[41] Section 104.603 is directly targeted at funding programs similar to this retraining model:

> §104.603. In funding programs and activities of support services for women, *funds may be used to increase the*

number of women instructors involved in the training of individuals in programs which have traditionally enrolled mostly males, so as to provide supportive examples for these women who are preparing for jobs in these non-traditional areas of employment. (Emphasis added.)

Subpart 3--Program Improvement and Supportive Services. The purpose of this Subpart is to improve vocational education by providing funds to states through their vocational education Research Coordinating Units to support research programs, exemplary and innovative programs, and curriculum development programs.[42] Funds can be used for projects that are part of applied research and development that show promise of overcoming sex bias and stereotyping.[43] In addition, priority is given to exemplary and innovative programs designed to accomplish the same purpose.[44]

Funds also are available for:

- Development and dissemination of curriculum designed to overcome sex bias in vocational education programs.
- Development and dissemination of guidance activities designed to overcome sex bias in vocational education programs.
- Support services designed to enable teachers to meet the needs of individuals enrolled in vocational education programs traditionally limited to members of the opposite sex.[45]

In case all of these sources of funding are insufficient, states may make grants under §104.792 to support activities which show promise of overcoming sex bias and stereotyping.

Under the same source, funds may be used for projects such as:

- Research projects on ways to overcome sex bias and stereotyping.
- Training to acquaint guidance counselors, administrators, and teachers with ways of effectively overcoming sex bias and of assisting women in selecting careers.

Clearly the retraining model would assist in meeting these objectives. Pre- and post-data collection on the participants will permit an evaluation research design. Exemplary programs also can be developed for participating counselors and teachers.

Packaging the Program

Packaging the program piece by piece will be extremely difficult. It will be much simpler if the state department of vocational education itself decides that the program has validity and works with the university to obtain funds under the United States Office of Education Commissioner's Discretionary Programs and/or to assign funds from its basic grants and program improvement and supportive services funds to pay for the program. In view of the numerous sources of funds available, it is likely that a well-packaged program will obtain adequate resources to cover all program costs.

In putting together such a program, a university should consider how to best package the essential components: the number of fellowships likely to be available to the state, the percentage of fellowships that could be awarded to women, and the number of women that the project could realistically handle. If adequate funds cannot be obtained through the discretionary programs and a given number of fellowships cannot be committed, funds would have to be sought through other state programs.

The critical factor in providing funds for the project will be the provision of stipends. Asian, Hispanic, and Indian applicants could find support through the Bilingual Vocational Instructor Training Program (an estimated $625,000 has been allocated for the cost of training instructors). Some of the applicants will qualify for Comprehensive Employment and Training Act Title VI funding since they are likely to be unemployed and since many will be in the mid-to-lower income level. Others might obtain stipends under the Higher Education Act. If the commitment of fellowships is still too small or undependable the cost of the internship also could be sought from those local education agencies experiencing teacher shortages.

SELECTED PROGRAMS: TRADE AND INDUSTRIAL EDUCATION AND INDUSTRIAL ARTS EDUCATION

Of the eight major vocational education classifications, only two--trade and industrial education and industrial arts--meet all of the criteria for a successful retraining program as defined in the model. Health, home economics, and office occupations are female-intensive areas. Distributive education is a "mixed" field--rarely male-intensive at the secondary school level. Agriculture is an expanding

state. Technical occupations are usually taught at the postsecondary level, and even states with large secondary school programs are not likely to require a large enough number of teacher placements to warrant undertaking a program. Data on cooperative education are not adequate at present to indicate the number of male-intensive teachers required. However, cooperative education teachers in male-intensive and diversified cooperative programs are likely to be required since a demand for cooperative education teachers has been expressed; training women to fill such positions warrants investigation of need at the local level. The two areas that consistently offer the most opportunities for employing teachers in male-intensive vocational programs in most states appear to be trade and industrial education and industrial arts education. In these two areas, the situations of teachers and skilled women are examined separately, except in regard to competency-based curricula and the acquisition of skills in industrial arts education.

Trade and Industrial Education

Teachers

Program Design. New teachers and teachers returning to the labor market who desire to be trained to teach in a trade and industrial education program but have had little or no skill experience could do so in a few states. However, it would be difficult to fulfill all the requirements in the two years allotted, even for those with aptitudes for manipulative skills. The educational background of elementary and secondary teachers generally consists of a bachelor's or master's degree. Additionally, re-entering teachers will have had several years of teaching experience. It is unlikely that they will have had either work experience in a skilled occupation or vocational training at the secondary or postsecondary level. For a woman to become certified in trade and industrial education, she would have to complete one of the following:

- An apprenticeship program (from three to five years), plus two to three years additional work experience at the trained employee level, for a total of five to eight years. Although supervised work experience could shorten the period it would take,[46] any trade and industrial education program that requires completion of apprenticeship as proof of competency would be an unlikely area to consider because the time involved will be unduly long to be considered appropriate as a model.

- Completion of a secondary or postsecondary vocational training program (generally two years) plus two to four years work experience. Performing supervised industrial work experience concurrently with classroom experience,[47] rather than *seriatim*, could reduce the time, but it would still take two years to obtain the minimum work experience for most states, even under supervised conditions. It is possible that a teacher in certain states could complete the required coursework to teach vocational education within the same time frame. It is possible that a program could be designed (with the approval of state certification officers), particularly in states that would permit participants to begin teaching with a temporary certificate and to complete additional classroom work as part of an in-service program. Lastly, they might be able to eliminate all or most of the requirements by successfully passing occupational competency tests.

- Completion of a degree program in trade and industrial education. Since teachers would be given credit for most of their existing coursework, such a program would take approximately three years and could include both the vocational education courses and supervised work experience (in those states that require only limited years of work experience in qualifying as a vocational education teacher).

Preparing to teach trade and industrial education requires a composite of skills to be learned and requirements to be attained, including manipulative skills at an employable level as well as the underlying and cognitive theoretical skills. In addition to occupational or manipulative skills, teachers also would need to acquire professional or teaching competencies identified as important in vocational education. In view of their career background, most teachers would be familiar with basic teaching competencies, such as developing lesson plans, or presenting information with chalkboards. Competencies unique to vocational teachers such as job and task analysis would have to be acquired through pre-service or in-service training.

If a program to retrain teachers as trade and industrial teachers were attempted, women who had acquired some skills through interest or life experience would be the most appropriate candidates.[48] Preparing a teacher with no previous experience would be a long and difficult task. She could be trained more easily as a teacher of industrial arts. On the other hand, it would not be difficult to prepare a woman already experienced in a skilled occupation to qualify

as a teacher in trade and industrial education. (See section on Skilled Women.)

Work Experience. If a supervised industrial work experience is undertaken, it would be the responsibility of the university to obtain the cooperation of industry and to design an appropriate placement.

In identifying industrial work stations, university personnel should:

- Conduct a survey of business and industries in the area to determine availability of placements.
- Determine those organizations that are willing and able to cooperate in the education of teachers.
- Obtain agreement that close supervision will be available for those placed as well as those in an appropriate training plan.
- Assure that industrial experience will provide time for exposure to the functions of the industry as well as the provide for the industry's need for student placements.
- Assure that participants are compensated for work as part of the training placement.

Utilizing an industrial setting will provide specific learning experiences that will prepare the prospective teachers in the shortest time possible. Through successful on site supervision, women will become familiar not only with essential work skills but also with occupational mores.

University staff responsibile for identifying the work stations and approving them for academic credit should determine the quality of training and convene the group of women placed at work stations to discuss the learning experience gained. The coordinator's sensitivity in observing the social adjustments exhibited by students on-the-job will affect the success of the placement. A visit by the supervisor should become the vehicle for critical observation, evaluation, and a basis for planning related university instruction.

Efforts should be made to insure that feedback is given by the work supervisor to university staff and from staff to the students. Such feedback may be provided through seminars, class discussions and evaluations. The occupational experience must be integrated with the teacher education program in order to insure that most value is

obtained from the placement. Alternating work training and performance of learned task will reinforce the learning acquired through work experience as well as through the classroom experience. This suggests that a cooperative work model--half day in a classroom and half day in a work situation--should prove useful. Emphasis would be to help women relate their industrial experiences to a teaching situation. Orientation to teaching the skill while still learning it should be relied upon. The skills the teacher learns, thus, will have added significance.

Competency-Based Programs in Trade and Industrial Education. The acquisition of occupational skills and experience in the retraining program will be of primary concern. However, since universities and teacher training institutions are not equipped to offer vocational programs, it would be necessary to conduct such programs in vocational technical schools or junior colleges where facilities are available. Although familiar with the general aspects of teaching methodologies, teachers also must acquire professional competencies unique to vocational educators. A competency-based approach also can be used to assess teaching skills previously acquired. In view of the different needs of target populations, competency-based programs focusing on the needs of women elementary and secondary teachers and skilled women would be extremely useful.

Pre-Service Training. During the first year, a teacher could undertake training at a postsecondary school that would enable her to acquire the preliminary skill levels in the relevant trade. Additionally, components of the program would include courses in vocational education at the college level to provide her with the base for teaching the subject area. An elementary teacher also may have to take courses to acquire a secondary school certificate. During the second year, the woman would have to undertake work experience in a supervised industrial setting so that an appropriate level could be achieved. The cycle would be repeated, as necessary, depending on the skills required.

In-Service Training During the First Year of Teaching. A classroom team consisting of a teacher and a skilled woman could be established. The teacher would assume responsibility for the cognitive aspects of the skill training after she has completed a year of training either in postsecondary school or through work experience. The team partner, who is also enrolled in the program, would teach the manipulative skills. In this manner, two classes could be conducted simultaneously.

It is assumed that upon program approval the state could issue a temporary certificate and waive the remaining non-teaching work

experience requirement. Under any circumstances, a teacher could utilize her secondary school certificate to teach the cognitive skills. With practice, both women eventually would learn all the required tasks at a performance level acceptable to themselves, their male peers, and their students. After one or, at most, two years, by reinforcing each other's skills, both could gain sufficient skills to be employed as permanent teachers. Supervision and a supportive program for both should be continued by the university until each has gained enough confidence to teach a full program.

Skilled Women

Program Design. Vocational educators have estimated that between ninety to ninety-five percent of the teachers of trade and industrial education were employed formerly in industry as skilled tradespeople. Certification requirements of most states reflect this. It is only in recent years that college degree programs have been designed to train trade and industrial education teachers. Therefore, it should be a straightforward procedure for skilled women to move toward certification. Skilled men have been doing it for years. If a skilled woman has the required years of experience, is a high school graduate, and meets the other requirements, she would qualify for certification in most states.

Although the number of women who have already gained work experience is small, women are likely to provide the major resource to become teachers of male-intensive trade and industrial programs. It is likely to be easier, and certainly faster, to provide them with the essential teaching skills than it will be to provide women teachers, experienced in teaching traditional subjects, with the manipulative skills required to teach a male-intensive trade and industrial subject. One problem that may arise would be the transition of women from an industrial to an educational environment. Even for those who have become accustomed to a male-intensive working environment, the transition might prove difficult and would require support.

Competency-Based Programs. Since trade and industrial education teachers generally were recruited from among skilled individuals in industry who already have the vocational competence and work experience required to be certified, competency-based curricula focus only on the teaching of professional rather than occupational or technical competencies.[49] These are required by skilled women in obtaining competency as teachers and in order to make the relatively simple transition from industry to education.

Pre-Service Training. In some states, a short pre-service training period is required of newly-recruited skilled persons who have no prior teaching experience.

Increasingly viewed by teacher educators as an important part of vocational teacher education, it is clear that a carefully planned competency-based pre-service training period is needed.

Skilled women should be able to assume actual classroom teaching after having attained pre-service competencies. Further teaching competencies can be acquired through in-service training. However, to assure that women are comfortable in their new roles, it is urged that pilot programs insist on at least a six month pre-service period with work experience and an internship for at least another school term before teachers take on full classroom responsibility.

Skilled women who have obtained vocational training at the post-secondary level could attend college part-time and work part-time in an industrial supervised work experience. Depending upon the requirements, a combination of coursework and part-time work could be designed which would produce a bachelor's degree and certification at the end of two years. Such a program should be developed so that the participants could be issued a temporary certificate and permitted to complete additional requirements during the in-service program.

In-Service Taining. On completion of one half year of education courses, a trainee could move into an internship position at a comprehensive or vocational high school. The trainee could be placed with a trained vocational teacher to learn the teaching skills by observing experienced teaching. Since the woman already has the skills and the techniques appropriate to the trade and is familiar with the tools, she would be able to move into a useful function in the classroom, assisting students having difficulty with shop. She gradually would have the opportunity to pick up more of the teaching functions, first in the skills, and then assume full responsibility for the class. In concert with the field-based approach of competency-based programs, performance during the internship should be evaluated by university personnel. After starting to teach, the trainee would continue to attend college and take the essential courses for permanent certification. She may want to continue in order to acquire a bachelor's degree to gain additional knowledge or improve her income. An alternative to this program would be an assignment to a team teaching experience as described previously.

Industrial Arts

Historically, there have been different attitudes and opinions regarding the role of the industrial arts program and its relation to vocational education. It is currently viewed as legitimate for funding as a vocational education program. States, however, have taken different approaches to industrial arts: some use vocational education funds to support these programs, others do not.

Although work experience is not required in most states to teach industrial arts, a bachelor's degree in industrial arts is. To obtain a degree and be certified, a student must satisfy all degree requirements, including a prescribed number of hours in general education and in the teaching of industrial arts. Technical courses included in training for industrial arts often cover five areas: materials (including metals, wood, plastics), graphic arts, electricity/electronics, power and transportation, and drafting.[50] Additionally, courses such as career orientation or career education are included. Professional education courses usually include three or four courses in industrial arts teaching methods.

Teachers

Program Design. All permanently certificated teachers possess at least a bachelor's degree. The additional semester hours required for a secondary school teacher to obtain a degree in industrial arts, including courses to obtain manipulative skills and professional education courses, will generally range from thirty-six to forty-eight semester hours. Given these facts, a retraining program providing the training required to meet industrial arts certification requirements easily could be completed in two years.

The bulk of the program would consist of the acquisition of occupational skills where "hands-on" experience would be acquired. In addition, students would acquire industrial arts teaching methodology.

However, if a competency-based program were implemented in teaching methodology or if competency tests were offered, teachers could probably shorten the time invested by passing competency-based examinations. Assuming a full load of fifteen hours per quarter, teachers could fulfill the technical requirements in three terms plus a summer session. They also would have to take competency-based methodology courses.

In addition to the laboratory or workshop skills and the methodology courses, elementary school teachers also may be required to take

courses to meet certification requirements to teach at the secondary level. It is projected that a teacher holding all qualifications for a secondary certificate would be able to obtain a certification in industrial arts, as well as the necessary skills, in no more than two calendar years. Many would be able to complete the program in less time, expecially if they successfully complete an internship program.

Pre-Service Training. Manipulative skills can be gained either in college laboratories and/or at postsecondary vocational institutions. Teaching methodology would be available at the university. The teacher would continue her classes until she has completed the necessary courses for industrial arts certification.

For the second year, she could obtain an internship and be assigned to an experienced teacher in a beginning industrial arts program in order to develop specific skills in a work situation. She would be able to compare her skills with the level of the students, so she will know the level she must obtain to be both competent and confident. She would gain familiarity with the shop class and the problems facing the teacher. She would be able to assist the teacher first by helping the students who are least adept and gradually developing sufficient skills to be able to help more adept students. Similar to the internship in trade and industrial education, the internship performance should be evaluated by university staff.

Skilled Women

Program Design. For skilled women who have not attended college, a program in industrial arts would require obtaining a trade and industrial certificate and then moving to teach in the area of her expertise at the pre-vocational level. The program, therefore, would be similar to that of skilled women in trade and industrial education. Since her skills would be in a particular area, it would limit her usefulness and she might be required to gain skills in other areas.

Some universities will give up to two years of credit for successful performance on proficiency examinations. In those universities, it is, therefore, possible for skilled women to pursue a bachelor's degree in industrial arts within the two year time frame if they perform successfully on the examinations and obtain the two years credit. In some cases, universities also grant credits for work experience gained in a field related to a student's area of concentration.

A woman who has obtained an associate degree from a postsecondary school in a male-intensive vocational program would be able to qualify

as an industrial arts teacher within the time limit if the university credited her with all courses taken at the postsecondary level and if she broadened her base in skills required for certification.

Pre-Service Training. For women who attended a postsecondary school or received two years of credit by competency examination, pre-service training would involve at least two years of in-depth concentration on the acquisition of teaching skills plus additional courses to obtain the degree. This would include studying education theory and broadening her knowledge of related skills either in shop courses at the university or in postsecondary schools. The trainee would continue to attend college until she had the essential courses to qualify for a temporary certification of for a bachelor's degree.

Teachers and Skilled Women

Competency-Based Curricula. To date, fully-implemented, competency-based teacher education programs are less widely applied in industrial arts than in trade and industrial education. Difficulties exist due to the fact that competencies have to be acquired in both manipulative and teaching skills, very few of which have been developed as part of the curricula for teacher training--even though competency-based curricula have been developed in industrial arts and are utilized in high schools and at the postsecondary level.

Acquisition of Skills. Except in a few states, there is no requirement for work experience for industrial arts certification. However, skills can be obtained through on-campus laboratories, off-campus postsecondary vocational schools, and industrial experience. The concept of learning-by-doing can be implemented through small laboratory classes utilizing student training teams. Classroom experiences can be expanded by working and/or observing in industry for short periods in placements which represent the categories in which employment of high school students is most prevalent. Different companies can be involved so that the student can study various operations. As part of the pre-service program, the student might spend several weeks in a field experience in the type of school where she is likely to be teaching, thereby providing another type of reality-based experience to strengthen classroom experience.

TECHNIQUES AND PROGRAMS RESPONDING TO SPECIAL NEEDS

It is crucial to the process of retraining women that the initial group moving into positions which traditionally have been held by

men be well trained and competent. Unless the first group succeeds in doing a competent job, it will be difficult to expand the number of women entering these male-intensive positions. To insure that a positive experience occurs, careful program development will be required that responds to the unique circumstances being proposed.

The supportive programs can be designed to serve women who have a variety of occupational and educational experiences: those who have never attended college, those who have completed their associate degrees, recent teacher graduates, teachers with graduate credits or degrees, and teachers seeking to return to employment in schools. The section below describes the various supportive programs that will be required.

Changing Recruitment Practices

Recruitment of participants into this program would be substantially different from traditional recruitment methods practiced by universities. What sets this apart from the general routine is mainly the special characteristics of the women to be recruited, thus affecting the sources of locating prospective participants and the recruiting procedures.

Considerable ingenuity will be required to identify and recruit women possessing the requisite skills. The recruitment of elementary and secondary school teachers should be a relatively simple undertaking. On the other hand, the recruitment of those working in skilled jobs may be difficult since there are so few women with the necessary experience. Recruiting through industry is not likely to be very profitable. In light of the pressure on industries to hire women and minorities, industry is not likely to participate in an effort that will result in their losing skilled persons. Another factor is that teaching salaries are not as high as in industry. On the other hand, work and vacation schedules are attractive, particularly to working mothers.

Many professional and trade associations provide either formal or informal placement and referral services for members. Often the associations keep updated rosters of their members' employment or unemployment status and publish newsletters or journals. The project, therefore, could place an advertisement describing the program and providing information regarding entry. Many of the associations' committees which focus on women's issues would be very cooperative in helping to locate interested women. Local affiliates of national organizations, due to their closer relationships with their members, will be useful and should be approached.

Some talent banks include unemployed teachers. The national women's unions can provide referrals to a growing number of organizations developing at the local level which will have lists of skilled women by specific occupations. Local church groups, women's groups, and international sororities also may be suitable.

The following recruitment methods can be used to locate teachers:

- All teacher training institutions should be contacted through their departments of elementary and secondary education and placement offices. These will be able to identify recent graduates who have not been placed as well as re-entering teachers seeking employment.

- Women's centers on campuses should be alerted to opportunities available for retraining.

- Personnel offices in school districts can identify new teachers and re-entrants who have applied for positions but have not been placed.

- Public and private employment offices that serve professional women should be provided with a description of the program and type of candidate sought.

- State and local educational associations should be contacted for lists of members not presently employed and to place announcements in newsletters or bulletins.

- Newspapers, radio, and television can be provided with information and requested, as a public service, to encourage interested persons to contact the program.

The following items describe recruitment methods that can be used to locate skilled women:

- Teachers and administrators in secondary and postsecondary vocational education programs should be contacted as a means of identifying women who have completed their courses. Emphasis should be on identifying both women who graduated long enough ago that they would have been able to gather enough experience to meet certification as well as the names of recent graduates.

- Articles should be placed in the public, union, and trade associations press.

- Women in government or the military should be included by contacting local civil service and military discharge offices.

- Women who are recruited should be utilized as a resource for identifying others.

Recruitment Procedures. Once the names of candidates are obtained, a letter should be sent describing the program and the qualifications of those being sought. Women who indicate interest should be invited to a meeting. Because the issues and problems for each group of women are likely to be different, a separate meeting for working women and teachers should be planned.

At the meeting the program should be explained in detail. This would include a description of the support available through the pilot program, the length of time likely to be required, the required courses and/or work experiences, the availability of jobs, salaries, training and stipends. A question period would give individuals the opportunity to gain further information and provide the sponsors with a sense of the anticipated concerns and problems. At the close of the meeting, the names of those interested should be collected and a follow-up planned.

Selection of Applicants for Pilot Programs

If elementary and secondary school teachers are to prepare themselves to become trade and industrial teachers or industrial arts teachers, significant effort must be made to assure that those who decide to undertake preparation for teaching these courses have the aptitudes necessary for the occupations. A widely accepted method of determining such aptitudes is the General Aptitude Test Battery which is available for guidance and counseling through all state employment services and most state employment offices. Since the GATB is readily available and is no more sex biased than any aptitude test, we recommend that all teachers who have indicated an interest in participating in retraining should take it for two purposes: (1) to determine whether one has the minimum degree of manipulative dexterity likely to be able to acquire the essential skills and (2) to develop the basic data necessary to determine the degree of numerical ability, spatial ability, motor coordination, finger dexterity, and manual dexterity required for successful teaching.[51]

If a sponsor decides to utilize this approach, each participant would be required to take the test when applying for the program. Depending

on the teaching area to be pursued, a minimum performance level would be determined.

A teacher preparing students to be employed in a specific occupation should have the same level of aptitudes in each of the nine skill areas as are indicated by the General Apptitude Test Battery for any particular occupation.[52] If the teacher is seriously deficient in one or more of the skill areas, it is questionable whether she is a good candidate in that occupational area.

While the test battery is useful in determining apptitudes, no appropriate aptitude test exists for industrial arts teachers. Therefore, it is particularly important that participants entering a pilot program be tested and that a follow-up on their success be part of the evaluation.

Since women from industry have shown that they possess the necessary skills, there would be no requirement to test them for selection. However, as part of the evaluation, such data should prove very useful.

Counseling and Support Program

Examination of a wide variety of exemplary programs indicates that very little is offered that will prove useful as guidance to university staff developing the supportive programs for the women participating in this program. The returning teacher may share the problems of other women re-entering the labor market after career interruption for childrearing and homemaking. Reintroduction to the world of work is difficult enough, but when women are preparing to enter a career where students and fellow teachers are likely to be predominantly male, the complexity of problems may require group or personal counseling. Every project should seek suggestions from the women with regard to what they see as their difficulties and needs and ways to resolve them. The women who are likely to participate may vary from those who are traditional in their attitudes and socialization to those whose decisions have been most non-traditional, i.e., those who have selected employment and/or training in male-intensive occupations. Many programs designed for women make the assumption that women are seeking self-realization. Furthermore, they let the assumption dictate many of the approaches, e.g., assertiveness training and counseling for upward mobility. No easy assumptions will fit the variety of women likely to participate in this program.

If university staff or school supervisors need an exposure to the issues of sex stereotyping and bias, curriculum and audio-visual

material such as those prepared by the New Pioneer's Project of North Carolina will prove useful. However, additional materials specific to the issues to be faced by staff and others responsible for working with these women will be essential in order to prepare them to provide guidance to women in the program.

Women's Centers. Many universities have begun to open centers designed to assist women to adjust to college and to prepare for occupations previously dominated by men. If there is a center at the university, it should be evaluated to determine whether its services are appropriate for women in the program and whether these women are among those the center is interested in serving. Since many of their activities are oriented to problems of women entering competitive positions with men working in professional, rather than vocational, fields, some adaptation may be required if the pilot programs are to utilize the women's centers to provide supportive services. The problems that women in the retraining program are likely to face may be as much involved with gaining the respect and confidence of their students (who are likely to be predominantly young men initially) as it will be in relating to their male peers and administrators. Because the problems of these women are substantially different from those faced by other women at the university, it is essential that personnel in the centers be acquainted with all ramifications of the program.

Counseling Services. Counseling services also should be available. The project should develop programs that will assist the skilled women in the transition from industry to education and women teachers from female- to male-intensive classrooms.

Using women trained and experienced in group work as the leaders, peer group counseling sessions will permit women to share their problems and help each to find mutual solutions.[53] They also can assist women in learning to assess themselves more realistically in an atmosphere supportive of self-exploration. Counseling sessions should help resolve conflicts due to the attitudes of the women themselves and those with whom they will be working. Lacking role models, it will be important for the women to be convinced that they will be able to perform their jobs convincingly. The program must be ready to demonstrate that these jobs, indeed, are available and appropriate.

There will be differences in the perceptions and attitudes of those participating in the program. For women who have been teaching in traditional subjects at the elementary and secondary level, there is the difficulty of shifting from an occupation where their colleagues

were predominantly female to one where colleagues and students are likely to be male. The skilled women, on the other hand, must acquire the confidence that they can "transmit" the skills from an industrial to a classroom setting.

As part of the group process, husbands and men friends of the participants might be invited to informal meetings in groups (where supportive men may help to convince those who are not) as well as in groups including the women participants. Discussion should include their attitudes toward their wives' or friends' participation in the program. The mixed sessions could explore problems or conflicts both feel between their home or personal lives and the program and their perception of the role of men and women. Such sessions should be very useful in reducing conflict that may arise for some women.

Skilled women are likely to have more difficulty adjusting to the educational atmosphere. Elementary and secondary school teachers are likely to have difficulty adjusting to the male environment. Nonetheless, the similarity of problems is such that the two groups of women should be helpful to each other in reducing anxiety in entering a new environment. Skilled women can contribute by relating their experiences in an industrial atmosphere and teachers can contribute their experiences in schools. Both are likely to have similar problems in gaining the respect of their students, who may "test" them to determine if they are the equal of their male counterparts.

Being among the first to cross the sex barrier will take courage. Hence, participants must be prepared to cope with an all-male work situation where customs, language, and habits have been predicated on a single sex grouping. They also must be equipped to handle the individual reactions of the men whose group they have "invaded." Before entering or re-entering the education system the women themselves must feel that they can be successful in their new role. Many are likely to feel fear at the outset. But it will be possible to obliterate it once they have positive experiences and are able to share mutual reluctances. They must be able to help each other gain confidence that their performance will be acceptable by male standards.

Women planning to become teachers of industrial arts are likely to have fewer problems with students than teachers of trade and industrial courses since industrial arts students will be younger and, therefore, less willing to challenge a teacher. Also, teachers of industrial arts are more likely to be able to find placements

across the broad geographic and socio-economic spectrum, equally distributed in central cities, rural, or suburban areas. An industrial arts teacher, therefore, is more likely to find a job in a school similar to the one in which she acquired her previous teaching experience. Many opportunities in trade and industrial education may be in an atmosphere alien to many of the women.

Childcare Services. Women who have been working or have recently completed their education are likely to have solved whatever childcare or transportation problems they may have and are not likely to need this assistance. Those returning to the labor force may, however, need assistance in locating such facilities. One of the critical factors to be decided by the project (based on the characteristics of the women who will be participating) is whether or not it would be appropriate to include childcare as part of the project. If women indicate interest in childcare provided by the university, the project should investigate the services already available. Childcare services very often are provided to university personnel and students by various departments such as the women's centers, home economics, early childhood education, child development, and student organizations.

Transportation. Transportation to class may pose problems for some. Most women will own cars but, if married, it is likely that in households owning one car the working husbands will be using it. To facilitate women attending classes, the university should consider assisting in providing alternative means of travel, e.g., car pools, holding classes in more accessible locations, and scheduling classes in the evenings or on weekends when the women are more likely to have the availability of a car.

Family Demands and Need for Financial Assistance. Many of the returnees may have family demands which will permit them to participate only part-time. Participants who prefer to extend the time it takes to prepare for re-entry should be able to obtain a prorated stipend. Some of the re-entrants are likely to be single heads of households and who need more financial assistance than provided by legislation. Unless they are able to earn more than the stipends provided by this program, some may not be able to afford childcare or adequate transportation and therefore may be unable to participate. The project may have to seek other sources of funds for this group. The state or educational institution should try to be flexible in responding to the differing needs that are likely to arise among the target population.

Placement System. The sponsor should be prepared to provide a variety of placement services. As part of planning and development, the university should assume responsibility for contacting local education agencies prior to the start of the program in order to identify specific placement opportunities. Since women who qualify for certification would be quickly employable on completion of their pre-service training, the project should be able to identify schools in need of teachers in the appropriate disciplines. If internships are to be arranged, the university should assume responsibility for developing and supervising them. The university should negotiate with schools for the commitment of permanent placements on completion of successful internships.

Skilled women, particularly, are likely to need assistance in preparing for the job interview and in understanding the problems they are likely to face. Assisting women to be prepared for the interview is only one approach. The university staff also may work with the school system, apprising them of the expected advantages to women students when employing such a role model and, at the same time, helping male teachers see that women are capable of working under "masculine" conditions.

Scheduling and Location of Classes

The needs of adult women vary. Therefore, this may require that they be provided a choice of class times. Depending on whether or not day care services are available, those who have pre-school children may prefer classes in the evening or on weekends. Those with older children may want their classes scheduled during the day when their children are in school. Not only the time but the place courses are offered is important, since participants will not likely live on campus. Frequently they will have to commute some distances. Thus, classes that meet four or five days a week for one hour are generally less convenient than longer sessions that meet once or twice weekly. Each group of women will have different needs; the programs should respond to them. Part of the problem may be solved by utilizing the competency-based approach whereby self-paced, individualized instruction is stressed.

Staffing of the Program

To assure efficient operation of the program, it is essential that personnel involved be experienced in all aspects of the issues outlined in this paper. The director of the program must be familiar with the male-intensive vocational areas, particularly in the skill areas in which women are to be trained. In view of the special needs

of the pilot program, directors should be familiar with the university and with relevant staff at the state vocational education office. They also must be experienced in certification in order to deal effectively with state education agencies, local education agencies, and other state or local personnel.

There also should be at least a part-time group counselor to provide guidance and counseling. It is recommended that an individual sympathetic and familiar with the various backgrounds and needs of the women be involved. Where women will be placed on supervised work situations, services of a staff person who is experienced in industry also should be obtained.

Depending on the number of women recruited into the program, an appropriate number of faculty members to supervise placements in industry or school should be available. A teacher/student ratio of 1:12 or 1:15 would seemingly be suitable.

Training Seminars for Project Team

Staff working with retraining participants are themselves likely to be in need of retraining in order to become more sensitive to the implications of sexism in universities, schools, and society in general. Programs of teacher preparation in the past have not satisfactorily dealt with these issues. Since teachers at every level tend to teach as they were taught, they tend to continue the biased attitudes they observed and acquired as students. While in-service training has been instituted for public school staff, little organized effort has been undertaken to address the attitudes of teacher educators at the universities. Short term seminars should be required of university personnel, as well as school and industrial supervisors, prior to their involvement in this program. Material discussed in the counseling section of this paper should be included in the seminar. Pilot programs should include the development of materials unique to this model for dissemination to other universities who plan to run similar programs.

Seminars for University Personnel. Seminars should be held for faculty who will be working with the women in order to assure that they understand the problems and to avoid negative repercussions at the university and after placement. It is particularly essential that staff are appropriately prepared to provide the kind of support that will be needed to assure a successful experience both for the women and the university.

Seminars for university personnel should be held prior to the start of the program and continue throughout the first year--more frequently at the beginning, less frequently later. The staff will not only have to understand the dynamics of adjustment but also the dynamics of the interrelationships in the attitudes of the men teachers and the students in their classes.

These seminars must be of sufficient length to stimulate the necessary insights and to motivate the faculty. Otherwise it is unlikely that they will change either their teaching methods or their understanding. If they are to have a successful experience, they must come to understand the rationale behind the development of such a program as well as to understand their prospective women students. The seminars should be designed to transmit information about the women participants and their problems and then leave it to the group to find their own solutions. The problems these adult women are likely to encounter may vary, but understanding their difficulties will help the staff of the teaching institutions to gear their attitudes and responses to the variety of exhibited needs.

The women teacher participants are likely to have been exposed to only their mother, teachers, and nurses--women in traditionally feminine occupations. They may have had no opportunity to know about, much less observe, women in non-traditional occupations. Many of these women teachers were quite comfortable in thei acceptance of a traditional female job, i.e., that of an element ry or secondary school teacher. In early childhood they learned which activities and interests were appropriate for individuals of their sex. Their own socialization may have made them as traditional in their outlook as any member of the faculty.

On the other hand, skilled women have elected to enter a non-traditional occupation and have adjusted successfully to male-intensive training and/or employment. Almost certainly they selected this occupation with little assistance in their decision-making and, although some received support from family and educational personnel, many have faced the direct or indirect results of sex stereotype and bias.[54]

Various studies have shown that certain personality traits and behaviors have been identified as "appropriate for women" or "appropriate for men." Cultural expectations require that a woman be taught to be feminine--which is usually interpreted to mean submissive, dependent, docile. She is conditioned not to be assertive and competitive and to consider herself intellectually inferior. Those traits which are most often taught to girls as valuable for women are tact,

neatness, sensitivity, supportiveness, gentleness, calmness, orderliness, efficiency, and conflict avoidance. Those characteristics which are most often identified as valuable traits for men are self confidence, aggressiveness, independence, ambition, competitiveness, objectivity, logic, decisiveness, and dominance. Generally speaking, the "masculine traits" are viewed as more useful in contributing to successful careers than the "feminine traits." For a woman to defy these expectations obviously requires an especially strong personality. It is likely that women who have been employed in male-intensive occupations may have such strengths. This also could be true of graduates of non-traditional, postsecondary, male-intensive vocational programs. However, it is not likely to be true of the teachers, particularly elementary school teachers, since they have not necessarily taken on the characteristics of non-traditional women by simply enrolling in this program. Women who demonstrate the valued male traits in their work often have been labeled as "aggressive females," scarcely a complimentary term. It is likely that some women who have worked in male environments may have acquired these traits in order to survive. Some students are likely not to be aware of the cultural stigma attached to their sex. For this reason, faculty also should be prepared to transmit their newly obtained cultural awareness to these women. The staff must be prepared for expected differences among the women and be able to respond to both groups.

In order to be effective, the faculty's effort should not be passive; they should not wait for the women to ask for help. They should bear in mind that women may not necessarily know that they need help and may remain unaware of the problems they are facing.

Because they often lack self-confidence, some are likely to feel that their skills and abilities are inadequate or that they may have difficulty gaining the specific ones they are likely to need. Those who have been away from formal education for a long period are likely to experience the same problems experienced by all adult women returning to education. They may find their memory of mathematics inadequate or they may find it difficult to re-establish good study habits. Faculty should anticipate that lack of time is likely to be a major problem for women much more than for men. For women returning to the labor force, family obligations are likely to constitute significant obstacles. While still in the program, they may have difficulty finding and affording childcare unless such services are specifically offered. Some also may have difficulty due to lack of support from their families in their decision to undertake the program.

To counteract the insecurities, it is important that women have a positive experience from the beginning. Once a woman has had a negative experience with one instructor, she is much more likely to expect similar treatment from other instructors. It will be the responsibility of the staff to make every effort that the women's experiences remain positive or to provide training in coping with negative experiences.

Seminars for Supervisors in School and in Industry Where Women are Placed. To assure that women's experiences are not colored by sex bias, seminars also should be made available both to teachers of male-intensive programs in the secondary schools where women are placed and to supervisors in industry. The responsibility for instituting such seminars should rest with the university.

The persons with whom women will have to work are likely to be male vocational teachers or supervisors who have been subject to a lifetime of sex socialization. The teachers and superviosrs already may be practicing some sex role stereotyping in their classrooms and work sites in their treatment of students and employees and in their assignments of tasks. The participant cannot be assigned to a school or industrial placement and then be forgotten. It is the responsibility of the university staff to follow-up on all placements.

One must expect that the men vocational teachers and supervisors are likely to view the integration of women into their classrooms and worksites as an unnecessary invasion. Some will have difficulty viewing women as fellow workers and equals. Others will resent the situation simply because it is new. To ignore this backlash or to assume that problems will gradually fade away is unwise. The administration of the school and the employers must make it clear that they support the policy that women be treated as equal participants.

In order to improve the likelihood of the success of the project. teachers and supervisors must be assisted to understand their own motivations and reactions, both to the women teachers who join their school staff, their classes, or their workplace. The overall work climate will greatly influence the performance of the women teachers. Considerable effort should be exerted to provide the climate most conducive to the productivity of these new teachers.

Men teachers and supervisors should be given an opportunity to voice their concerns and offer suggestions as to how problems, if they arise, should be handled. The university should try to place the first women in male-intensive occupations in schools or internships with teachers or supervisors most likely to accept them. This will

be less crucial eventually if more and more women are so trained and if the men teachers and supervisors adjust to the idea of having women teaching male-intensive vocational education courses. The first few placements are likely to set the trend for subsequent placements. It is critical that they be successful. Even with the greatest effort and planning, some men are still going to be at a loss when it comes to interacting on a day-to-day basis with the women teachers.

CONCLUSION

Women teachers in secondary school male-intensive vocational education programs can open doors for women considering entering nontraditional careers. As male peers and students become accustomed to the idea that women are capable of teaching male-intensive vocational courses, they may gradually become accustomed to accepting women students in their vocational education classes.

This paper has described crucial issues in planning and implementing a model to retrain women teachers and skilled women to become teachers in male-intensive vocational programs. By implementing programs such as the ones described, states most assuredly will advance toward eradicating sex bias and stereotyping in vocational education.

NOTES

1. Male-intensive programs are defined in this paper as those programs in which 0.0 to 25.0 percent of the students nationally enrolled are women. (See pages 9 and 18.)

2. Under the Vocational Education Act of 1963 as amended in 1972 and 1976, Industrial Arts programs became reimbursable. In this paper vocational education includes industrial arts and is referring to male-intensive vocational education exclusively.

3. *Teacher Supply and Demand in the Public Schools, 1976.* Washington, D.C.: National Education Association, 1976.

4. U.S. Department of Commerce, Bureau of the Census. *1970 Census of the Population, Detailed Characteristics, U.S. Summary.* Washington, D.C.: Government Printing Office, 1973.

5. U.S. Department of Labor, Bureau of Labor Statistics. *Employment and Earnings.* Washington, D.C.: Government Printing Office, January 1977.

6. Padilla, A.H. *The Market for Teachers in the Nation and the Southern Region.* Atlanta: Southern Regional Education Board, 1975.

7. *The Guide to Vocational Education in America: Trends to 1978.* Westport, Conn.: Market Data Retrieval, Inc., 1975.

8. Ibid.

9. U.S. General Accounting Office, Comptroller General of the United States. *Supply and Demand Conditions for Teachers and Implications for Federal Programs.* Washington, D.C.: Government Printing Office, March 6, 1974.

10. Twenty-one percent of male-intensive trade and industrial students are women. Cooperative education is not independently reported and industrial arts is seriously underreported. (See section on Industrial Arts.)

11. Based upon the FY75 State Annual Reports to United States Office of Education.

12. "Ag Educators Examine Programs." *American Vocational Journal.* 52(February 1977): 36.

13. Based upon the FY75 State Annual Reports to United States Office of Education and computer data received from the individual states.

14. Diversified programs are those in which the percentages of males and females enrolled are comparable.

15. According to *Vocational Education Act of 1963* as amended in 1972.

16. Sex stereotyping refers to cultural biases attributed to one sex held by society in general, such as women should not do "men's" work, and vice versa. Sex discrimination refers to practices which are against the law, i.e., discriminatory practices based on sex.

17. Registered nurses, kindergarten and elementary school teachers, teachers' aides, bookkeepers, cashiers, receptionists, secretaries, typists, file clerks, sewers and stitchers, cleaning services, waitresses, health services, private household workers, telephone operators, personal services, and food service workers.

18. *Employment and Earnings*, January 1977.

19. U.S. Department of Labor, Bureau of Labor Statistics. *Employment Data for Detailed Occupations.* Table A-21, "Employed Persons by Major Occupational Group, Sex, Color." Washington, D.C.: Government Printing Office, 1975, p.42.

20. *Employment and Earnings*, January 1977.

21. Based on Rj Associates' Survey of State Departments of Vocational Education conducted in connection with this study.

22. Data by sex, by detailed program classifications are not currently required of states by U.S. Office of Education.

23. U.S. Department of Health, Education, and Welfare, National Center for Educational Statistics. *Students Enrolled for Advanced Degrees, Fall 1972.* Washington, D.C.: Government Printing Office, 1975.

24. U.S. 94th Congress, 1st Session. House Committee on Education and Labor. *Education Amendments of 1976.* PL 94-482, Title 1--Vocational Education. Washington, D.C.: Government Printing Office, 1976.

25. U.S. General Services Administration, Office of the Federal Register. *Federal Register*. Washington, D.C.: Government Printing Office. §104.187.

26. For example, see Hedges, J.N. and Bemis, S.E. "Sex Stereotyping: Its Decline in Skilled Trades." *Monthly Labor Review*. Volume 97 (May 1974): pp. 11-22 and U.S. Department of Labor, Manpower Administration. *Manual for the USTES, General Aptitude Test Battery*. Washington, D.C.: Government Printing Office, 1970. (Women excel in Form Perception, Motor Speed or Motor Coordination, Finger Dexterity, and Clerical Perception; men in Spatial Aptitude.)

27. All sources of funding described in this paper are based on PL 94-482 and the final regulations filed September 30, 1977 and published in the *Federal Register* on October 3, 1977.

28. *Federal Register*, Part 105, October 3, 1977.

29. These figures do not include additional funds which have been approved by Congress.

30. *Federal Register*, §105.431 to §105.443.

31. Ibid.

32. Part 104, Ibid.

33. See Sections 111(a)(1), 130(b)(5 and 6), 135 and 136; PL 94-482.

34. *Federal Register*, §104.74.

35. §104.502, Ibid.

36. §104.76, Ibid.

37. §104.161 and §104.187, Ibid.

38. For example, they may be women re-entering the labor market.

39. For example, they may be substitute teachers.

40. For example, they may be elementary school teachers.

41. *Federal Register*, §104.602.

42. §104.702 Ibid.

43. §104.705, Ibid.

44. §104.706, Ibid.

45. §104.708, Ibid.

46. Many states will credit a student with two years of experience for each year of supervised work experience.

47. The standard method of calculating one year's work is employment for 2,000 hours.

48. Some rural women, for example, may have obtained considerable mechanical experience by having lived and worked on a farm.

49. Andreyka, R.E. "A Florida Approach to Competency-Based Vocational Teacher Education." Paper presented at the Competency-Based Vocational Leadership Conference. Lexington, Kentucky. April 20-22, 1976. 20 pp. (ED 126 277)

50. See, for example, the undergraduate catalogues for University of Wisconsin at Stout and the State University of New York at Oswego.

51. Collection and analysis of the data included in the evaluation would prove useful to other universities considering operating such a program.

52. See U.S. Department of Labor, *A Supplement to the Dictionary of Occupational Titles, Third Edition.* Washington, D.C.: Government Printing Office, 1966.

53. Staff should consult a group work specialist in the School of Social Work or in the School of Education, if their guidance and counseling department do not have group counselors.

54. *A Study of the Factors Influencing the Participation of Women in Non-Traditional Occupations in Postsecondary Area Vocational Training Schools.* Volume 1. Arlington, Virginia: Rj Associates, Inc., November 1976. (ED 132 429)

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Garner, W. C., and Welch, F. G. "The Relevance of Work Experience to a Vocational Industrial Teacher Education Program." *Journal of Industrial Teacher Education* 20, 1 (Fall 1975): 17-23.

Kapes, J. T., and Pavlowski, V. *Characteristics of Vocational-Technical Instructors and Their Relationships to Student Shop Achievement.* Research Report, Vocational Development Study, Series Monograph, Number 17. University Park, Pa.: Pennsylvania State University, 1974. (ED 092 858)

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Ramp, W. S. "Vocational Certification: A National Overview." In S. T. Brantner (ed.) *Certification of Vocational-Technical Educators.* University Park, Pa.: Pennsylvania State University, 1974. (ED 099 582)

Spellman, R. E., and Bruce, H., Jr. "V-TECS: The Push to Competency-Based Curriculum." *American Vocational Journal* 51 (September 1976): 30-32.

U. S. Department of Labor, Bureau of Labor Statistics. *Tomorrow's Manpower Needs.* Volume 4 (Revised). Washington, D.C.: Government Printing Office, 1976.

APPENDIX

U.S. Department of Labor
Office of the Secretary
Women's Bureau
Washington, D.C. 20210

WOMEN IN NONTRADITIONAL EMPLOYMENT

RESOURCE LIST

PUBLICATIONS

Equal Employment Opportunity Commission
2401 E Street, N.W.
Washington, D.C. 20506

(or see telephone directory listings under "U.S. Government")

A Directory of Resources for Affirmative Recruitment (91 pages). 1975.

Guidelines on Discrimination Because of Sex. 1972.

Minority Women Employment Program:
40 Marietta Street, N.W., Suite 808
Atlanta, Georgia 30303

Minority Women Employment Program: A National Demonstration Project To Facilitate Entry of Women Into Managerial, Professional, and Technical Positions. Second annual report.

Outreach Handbook. Discusses how to develop an outreach program.

Order from:

Center for the Study of Human Resources
University of Texas
107 West 27th Street
Austin, Texas 78712

National Commission on the Observance
of International Women's Year
U.S. Department of State
Washington, D.C. 20520

". . .To Form a More Perfect Union. . ." Justice for American Women. (382 pages). 1976. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. $5.20.

U.S. Commission on Civil Rights
Washington, D.C. 20425

The Challenge Ahead: Equal Opportunity in Referral Unions (291 pages). 1976.

A Guide to Federal Laws and Regulations Prohibiting Sex Discrimination (189 pages). 1976.

Women and Poverty (131 pages). 1974.

U.S. Department of Commerce
Bureau of the Census
Washington, D.C. 20233

A Statistical Portrait of Women in the U.S. Special Studies, Series P-23, No. 58 (90 pages). 1976.

U.S. Department of Health, Education, and Welfare
Office of Education
Bureau of Occupational and Adult Education
Washington, D.C. 20202

Women in Nontraditional Occupations: A Bibliography (189 pages). 1976.

U.S. Department of Labor
Bureau of Labor Statistics
441 G Street, N.W.
Washington, D.C. 20212

Occupational Outlook Handbook. 1978-79 Edition, Bulletin 1955. (840 pages). Available from the Superintendent of Documents. U.S. Government Printing Office, Washington, D.C. 20402. $8.00.

U.S. Working Women: A Chartbook. Contains 56 charts. Bulletin 1880. 1975.

U.S. Working Women: A Databook. Includes 61 tables and 7 charts. Bulletin 1977. 1977.

U.S. Department of Labor
Employment and Training Administration
601 D Street, N.W.
Washington, D.C. 20213

Apprenticeship and CETA. A guide for prime sponsors under the Comprehensive Employment and Training Act of 1973 (33 pages). 1974.

Apprenticeship: Past and Present (27 pages). 1977.

Apprenticeship Training in the 1970's: Report of a Conference. Manpower Research Monograph No. 37 (100 pages). 1974.

Apprenticeship Training: Sure Way to a Skilled Craft (8 pages). 1974.

Dual Careers: Longitudinal Analysis of the Labor Market Experience of Women (4 volumes). 1970, 1973, 1975, 1976.

ETA Interchange. Monthly technical assistance bulletin.

Job Title Revisions To Eliminate Sex- and Age-Referent Language From the Dictionary of Occupational Titles (363 pages). 1975.

Merchandising Your Job Talents (24 pages). 1974.

The National Apprenticeship Program (41 pages). 1976.

Training and Entry Into Union Construction. Manpower R&D Monograph No. 39 (217 pages). 1975.

WIN Training Manual. Increasing Job Options for Women by Nontraditional Job Placement. 1975.

Women in Apprenticeship--Why Not? Manpower Research Monograph No. 33 (34 pages). 1974.

Worklife. Monthly journal of ETA; frequently carries and reprints articles about women working in nontraditional jobs. Special issue on Apprenticeship, August 1977.

U.S. Department of Labor
Women's Bureau
Washington, D.C. 20210

Brief Highlights of Major Federal Laws and Order on Sex Discrimination in Employment (6 pages). 1977

The Earnings Gap Between Women and Men (12 pages). 1976. 35¢

Fully Employed Women Continue to Earn Less Than Fully Employed Men of Either White or Minority Races (chart). 1977.

Most Women Work Because of Economic Need (chart). 1977.

The Myth and the Reality (3 pages). 1974.

1975 Handbook on Women Workers (435 pages). 1975. $4.70.

Sex Stereotyping: Its Decline in the Skilled Trades. Reprint from May 1974 Monthly Labor Review.

State Labor Laws in Transition: From Protection to Equal Status for Women (20 pages). 1976. 35¢.

Steps To Advance Equal Employment Opportunity for Women (2 pages). 1975.

Steps To Opening the Skilled Trades to Women (8 pages). 1974.

Trends in Women's Employment and Training in Selected Professions (4 pages). 1976.

Why Not Be an Apprentice and Become a Skilled Craft Worker? (Folder). 1974.

Women Are Underrepresented as Managers and Skilled Craft Workers (Chart). 1974.

Women Workers Today (10 pages). 1976.

A Working Woman's Guide to Her Job Rights (34 pages). 1975. 65¢.

Note: The Women's Bureau distributes single copies of its publications free of charge. Multiple copies of those for which prices are given may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. All Women's

Bureau materials are in the public domain and may be reproduced without permission.

SLIDES

All in a Day's Work. Wisconsin Women in Apprenticeship Aide Center, 819 N. 6th Street, Wilwaukee, Wisconsin 53203, (414) 224-4388. Slides show women apprentices at various stages of employment/training, and detail advantages of apprenticeship jobs. (8 minutes)

Destroying the Myths. EEOC Audio-Visual Division, Room 3200, Columbia Plaza, 2401 E Street, N.W., Washington, D.C. 20506, (202) 634-6930. Reviews employer equal opportunity responsibilities. (10 minutes)

Looking Ahead to a Career. Bureau of Labor Statistics, U.S. Department of Labor. (See telephone directory for address of regional office.) 53 statistical slides about occupations and employment trends.

Slides-Tape Series:

Increasing Job Options for Women. Shows women working in a variety of nontraditional jobs and reviews employer responsibility for equal opportunity and affirmative action. (NAC#007846, $13.50, 9 minutes 45 seconds)

The Legal Rights of Women Workers. Explains women's right to equal employment opportunity, equal training and promotion opportunity, and equal pay. (NAC #007847, $12.00, 6 minutes 5 seconds)

Legal Responsibilities--Affirmative Action and Equal Employment. Illustrates legal responsibilities of employers to eliminate unfair and illegal employment practices that often affect women. (NAC #007848, $13.75, 12 minutes)

(This three-part series may be ordered from the Order Section, National Audio-Visual Center (NAC), General Administration, Washington, D.C. 20409. They may be borrowed from the Women's Bureau, U.S. Department of Labor, Washington, D.C. 20210.

FILMS

All About Eve. Center for Human Resources, University of Houston, College of Business Administration, Cullen Blvd., Houston, Texas 77004, (713) 749-3755. About increasing female enrollment in traditionally male courses in high school. (22 minutes, color)

Anything You Want To Be. New Day Films, 779 Susquehanna Avenue, Franklin Lakes, New Jersey 07417, (201) 891-8240. Illustrates conflicts experienced by girls as they find out that "anything you want to be" means traditional roles and occupations. (8 minutes, b/w)

The Apprentice. Bureau of Apprenticeship and Training, Employment and Training Administration, U.S. Department of Labor, 601 D Street, N.W., Washington, D.C. 20213. General film giving history, current status, and reality of apprenticeship. Interviews women and men apprentices on the job. (26 minutes, color). Available on loan from BAT regional offices. See telephone directory for address.

Beyond Black and White. Motivational Media, 8271 Melrose Avenue, Suite 204, Los Angeles, California 90046, (213) 653-7291. Contains forceful arguments for eliminating sex role stereotyping. (28 minutes, color)

Bias - A Four Letter Word. Malibu Films, Malibu, California 90265, (213) 456-2859. Shows how biases originate and are perpetrated against women, minorities, the aged, people of differing life styles. (30 minutes, color)

Boomerang. Keeton/Leopold Associates, Inc., 35 East Wacker Drive, Suite 690, Chicago, Illinois 60610, (312) 726-1947. This film is a management training program in equal employment opportunity.

Choice: Challenge for Modern Women. University of California Extension Media Center, 2223 Fulton Street, Berkeley, California 94720, (415) 642-0460. Twelve part series, one of which is "Wages of Work," about women and employment and its effects on family, community. (30 minutes each, b/w)

The Fable of He and She. Learning Corporation of America, 1350 Avenue of the Americas, New York, New York 10019, (212) 397-9330. Animated Clay figures act out story demonstrating sex role stereotyping.

Farewell to Welfare. ETA Studios, Distributed by R.H.R. Film Media, 1212 Avenue of the Americas, New York, New York 10036, (212) 869-9540. Interviews with three WIN women, a truck driver, picture framer-manager, and machine operator, and their employers (30 minutes, color)

51%. Robert Drucker & Company, Inc., producer. Distributed by Cally Curtis Company, 1111 North Las Palmas Avenue, Hollywood,

California 90038, (213) 467-1101. Three case studies of women employees in a corporation spotlight stereotypes about and discriminations against women. (30 minutes, color)

How Many Eves? Walter J. Klein, Co., Ltd., 6301 Carmel Road, Charlotte, North Carolina 28211, (704) 542-1403. Dramatizes the problems and attitudes of women in the midmanagement level as they seek to upgrade themsleves. (15 minutes, color)

Never Underestimate the Power of a Woman. Bureau of Audiovisual Instruction, P.O. Box 2093, University of Wisconsin, Madison, Wisconsin 53701, (608) 262-2944. Dispels damaging myths about women's work capacities and performance in a wide range of nontraditional settings. (15 minutes, color)

New Perspectives--Women in Nontraditional Jobs. Employment and Training Administration. Distributed by R.H.R. Film Media, 1212 Avenue of the Americas, New York, New York 10036, (212) 869-9540. Interviews with two women, a busdriver and a shipbuilder, about how they got their jobs and how they feel about them.

The Only Way To Go Is Up. Employment and Training Administration. Distributed by R.H.R. Film Media, 1212 Avenue of the Americas, New York, New York 10036, (212) 869-9540. Documentary on Atlanta's Minority Women Employment Program's successful efforts to place underutilized college educated minority women in managerial, professional, and technical jobs. (30 minutes, videotape)

Other Women, Other Work. Churchill Films, 662 North Robertson Boulevard, Los Angeles, California 90069, (213) 657-5110. The rewards and occasional problems of women in traditionally male jobs are expressed by a truck driver, a roof shingler, a pilot, a marine biologist. (20 minutes, color)

Prejudice: Causes, Consequences, Cures. CRM-McGraw-Hill Films, Del Mar, California 92014, (714) 481-8184. Surveys and recent sociopolitical examples of detrimental stereotyping, showing just how psychologically harmful discrimination can be. (24 minutes, color)

Rollover. Herstory Films, Box 215, Franklin Lakes, New Jersey 07417, (201) 891-8240. Celebrates women in nontraditional jobs. (10 minutes, color)

Sex Role Development. CRM-McGraw-Hill Films, Del Mar, California 92014, (714) 481-8184. Shows how we have developed traditional

expectations about male and female roles; offers alternative methods of socialization that encourage children to grow up outside of fixed stereotypes. (23 minutes, color)

The Sky's the Limit. Bureau of Apprenticeship and Training, Employment and Training Administration, U.S. Department of Labor, 601 D Street, N.W., Washington, D.C. 20002, (202) 376-6106. Apprenticeship agency/employer/union information film depicting women apprentices in nontraditional jobs. (25 minutes, color). Available on loan from the Bureau of Apprenticeship and Training regional offices. See telephone directory for address.

Twelve Like You. Cally Curtis Company, 1111 North Las Palmas Avenue, Hollywood, California 90038, (213) 467-1101. Twelve women working in both professional and technical nontraditional jobs share their experiences and problems. (25 minutes, color)

We Are Women. Motivational Media, 8271 Melrose Avenue, Suite 204, Los Angeles, California 90046, (213) 653-7291. Provides front line supervisors and all other levels of management with an understanding of the historical, sociological, and psychological background of today's working woman. (33 minutes, color)

Why Not a Woman. Pennsylvania Commission for Women, 512 Finance Building, Harrisburg, Pennsylvania 17128, (717) 787-3821. Documentary on women in blue-collar jobs. (26 minutes, color)

Women Up the Career Ladder. UCLA Dept. of Daytime Programs and Special Projects, P.O. Box 24901, Dept. K, UCLA Extension, Los Angeles, California 90024, (213) 825-0741. Provides basis for discussion for women employees, management, and men about issues involved in moving up the career ladder, such as job stereotyping. (30 minutes, b/w)

Women's Work: Engineering. Massachusetts Institute of Technology, Center for Advanced Engineering Study, Department 4, Room 9-234, 77 Massachusetts Avenue, Cambridge, Massachusetts 02139, (616) 253-7444. Women engineers and engineering students talk about engineering and how they feel about their jobs. (26 minutes, film or videotape, color)

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